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|-------------------------------|-----------------|--------------|--|
| <b>Notice of Allowability</b> | Application No. | Applicant(s) |  |
|                               | 10/672,769      | HSIAW ET AL. |  |
|                               | Examiner        | Art Unit     |  |
|                               | David Nhu       | 2818         |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/21/04.
2. ☒ The allowed claim(s) is/are 1-23.
3. ☒ The drawings filed on 26 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |



## DETAILED ACTIONS

### EXAMINER'S AMENDMENT

1. Applicant's election of claims 1-23 is acknowledged. Because Applicant did not distinctly and specifically point out the supposed error in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

**Applicant have the right to file a divisional application covering the subject matter of the non-elected claims 24-28.**

The traversal is on the ground(s) that see the election paper. This is not found persuasive because the fields of search for method' and device claims are NOT coextensive and the determinations of patentability of method and device claims are different, that is process limitations and device limitations are given weight differently in determining the patentability of the claimed inventions. Also, the strategies for doing text searching of the device claims and method claims are different. Thus, separate searches are required.

The requirement is still deemed proper and is therefore made FINAL.

2. An examiner's amendment to the record appears below. Should the change and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

**Cancel claims 24-28.**

**REASONS FOR ALLOWANCE**

3. Claims 1-23 are allowed.

4. The following is an examiner's statement of reasons for allowance: None of the references of record teaches or suggests in claims 1, 13: depositing a first layer comprising phosphorous doped SiO<sub>2</sub> over the semiconductor substrate to a thickness sufficient to fully cover the gate electrode portions including intervening gaps; depositing a second layer of undoped SiO<sub>2</sub> over and contacting the first layer to a thickness sufficient to leave a second layer thickness portion overlying the first layer following a subsequently oxide chemical mechanical polish (CMP) planarization process; carrying out the oxide CMP process to planarize the second layer and leave the second layer thickness portion; and forming metal filled local interconnects extending through a thickness portion of the first and second layers (as cited in claim 1); depositing a first layer comprising phosphorous doped SiO<sub>2</sub> over the semiconductor substrate to a thickness sufficient to fully cover the gate electrode portions including intervening gaps; depositing a second layer of undoped SiO<sub>2</sub> over and contacting the first layer to a thickness sufficient to leave a second layer thickness portion overlying the first layer following a subsequently oxide chemical mechanical polish (CMP) planarization process; carrying out the oxide CMP process to planarize the second layer and leave the second layer thickness portion; forming LI trenches extending through a thickness of the first and second layers; depositing tungsten to fill the LI trenches; and carrying out a tungsten CMP process to expose the second layer ( as cited in claim 13).

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the

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issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### CONCLUSION

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Lee (5,950,102): Method for Fabricating Air Insulated Multilevel Metal Interconnections for Integrated Circuits.

7. Any inquiry concerning this communication on earlier communications from the examiner should be directed to David Nhu, (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

The examiner's supervisor, David Nelms can be reached on (571)272-1787.

*The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956*

David Nhu



October 30, 2004

**DAVID NHU**  
**PRIMARY EXAMINER**